

**Abstract**

The present invention is directed to audio processing including IP telephony audio processing. Voice-over-IP terminals used in phone terminal applications benefit from a low-power implementation suitable for the limited chassis area of these devices.

5 According to an example embodiment of the present invention, a programmable audio processor chip is adapted to process voice data for IP communications. The chip includes a DSP voice compression device adapted to compress voice data, and audio processing circuitry programmed with an audio processing software application adapted to process the compressed voice data. The chip further includes an IP network stack

10 adapted to store and process IP data. The IP data includes protocols for processing the compressed voice data via an IP network. A communication stack is also included in the chip and is adapted to store and process communications data. The communications data includes audio processing protocols for processing the compressed voice data. In a more particular example implementation, the chip is used in a complete IP phone

15 system for processing data ranging from audio samples to compressed TCP/IP packetized network signals, and is implemented with 2 Mbits of on-chip RAM. In this manner, voice and data networks are effectively fused in a way that facilitates user control for the integration of applications including computer telephony applications.